The art and science of amateur experimentalism

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» Energetic Materials

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Author: **Subject: Ammonium perchlorate without DIY anodes?**

greenlight
International Hazard
★★★★★

posted on 2-4-2017 at 21:00

Posts: 620
Registered: 3-11-2014
Member Is Offline

Mood: Energetic

No the power supply is 5 volt 20 amp.

I did purchase a power meter but it requires a shunt to run and the meter is a 1-200 amp meter so it needs to be paired with a 200 max amp shunt for accurate reading.
A replacement shunt is only $5.00 USD so its not too much of a setback.

The only use for an atomic bomb is to keep somebody else from using one.
George Wald

PROFILE FIND

markx
International Hazard
★★★★★

posted on 3-4-2017 at 14:01

Posts: 591
Registered: 7-8-2003
Location: Northern kingdom
Member Is Offline

Mood: Very Jolly

> **Quote:** Originally posted by greenlight
>
> No the power supply is 5 volt 20 amp.
>
> I did purchase a power meter but it requires a shunt to run and the meter is a 1-200 amp meter so it needs to be paired with a 200 max amp shunt for accurate reading.
> A replacement shunt is only $5.00 USD so its not too much of a setback.

It is not the ampere range of the shunt that determines the functionality of the setup, but rather the actual ohmic resistance of the shunt. It is essentially a low ohm resistor and the ampmeter is actually a voltmeter that displays the ohmic voltage drop on the shunt as amperes passing through it according to the equation I=U/R. The R in the equation is the resistance that the ampmeter "expects" the shunt that it measures the voltage drop across to have....if the shunt does not have this particular resistance then the reading of the ampmeter is flawed and it does not matter if the shunt is designed to handle 20A or 500A as a maximum.

Exact science is a figment of imagination.....

PROFILE FIND

yobbo II
National Hazard
★★★★

posted on 3-4-2017 at 15:05

Posts: 332
Registered: 28-3-2016
Member Is Offline

Mood: No Mood

I would imagine that since the same people are selling the range of meters and the range of shunts then the '200 amp' meter goes with the '200 amp' shunt. ie. the resistance of the 200 amp shunt suits that particular meter.

PROFILE FIND

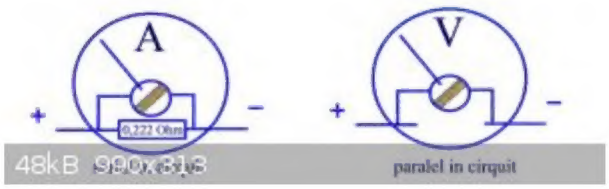
Laboratory of Liptakov
International Hazard
★★★★★

posted on 4-4-2017 at 05:29

measurement

Posts: 818
Registered: 2-9-2014
Member Is Offline

Mood: cool.gif



Safety explosive Alfred Nobel 1867. Safety ecologic detonator Dr. Liptakov 2015.

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Laboratory of Liptakov
International Hazard
★★★★★

posted on 6-5-2017 at 06:58

Posts: 818
Registered: 2-9-2014
Member Is Offline

Mood: cool.gif

Beware of this seller. Sells very low quality platinum anodes.
http://store.theamateurchemist.com/platinum-titanium-anode-2...
All describe here: https://www.youtube.com/watch?v=xV-SaP2iv7s

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ecos
National Hazard
★★★★

posted on 6-5-2017 at 14:54

Posts: 464
Registered: 6-3-2014
Member Is Offline

Mood: Learning !

i tried their MMO anodes and they do great.
it is bad to know that you wasted your money for this Pt anode.
did you contact them for this problem ?

note: are you sure that you must multiply by 2 for both sides ?!
I think 20 A are too much.
usually I use 5-6 A

[Edited on 6-5-2017 by ecos]

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Laboratory of Liptakov
International Hazard
★★★★★

posted on 6-5-2017 at 23:14

Posts: 818
Registered: 2-9-2014
Member Is Offline

Of course, that both sides. I putted everywhere minimal 10 question about it. And everybody says, even 2,2x for mesh type, against planar surface. Of course, that without external cooling is possible use only 6 A. I readed before start almost all textes about recommend of current. Current was in toleration, even in his half. In commerce process are use 2x more currents for platinum on cm 2, thus 500mA /cm2. At my was used was current 260 mA/cm2. And it even on

Mood: cool.gif

only 3 hours. After partially damage was current established12A, thus 160 mA/cm2.

[Edited on 7-5-2017 by Laboratory of Liptakov]

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ecos
National Hazard
★★★★

posted on 7-5-2017 at 02:12

Posts: 464
Registered: 6-3-2014
Member Is Offline

Mood: Learning !

I am not sure but mesh has low surface area. I think you might need to multiply with scaling factor like 0.2 due to the gaps in the mesh.

I am not sure about that but I am thinking with you.

try to send to the website about this problem and understand what was the root cause.
Maybe they will be kind and send you another anode for free.

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International Hazard
★★★★★

posted on 7-5-2017 at 02:46

Posts: 818
Registered: 2-9-2014
Member Is Offline

Mood: cool.gif

Here is comunication from this forum: Yobbo II say:

yobbo II
Hazard to Others
***

Posts: 172
Registered: 28-3-2016
Member Is Offline

- posted on 28-4-2017 at 07:37 Reply With Quote Report Post to Administrator

Quote: Originally posted by Laboratory of Liptakov
Thanks. Other words 1 cm2 on mesh = 1 cm solid planar surface, counting on one side. Thus, 1cm2 anode (mesh) = 2 cm2 surface as total large for counting of current. Right ?

It is around two times the length x breath of the piece of mesh.

"A major MMO manufacturer told me that their MMO mesh was 2.2 times the basic dimensions."

This quote from here
http://www.amateurpyro.com/forums/topic/3981-the-bucket-cell...

Yob

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Laboratory of Liptakov
International Hazard
★★★★★

posted on 7-5-2017 at 03:00

current to anode

Posts: 818
Registered: 2-9-2014
Member Is Offline

Mood: cool.gif

rewritte from amateurpyro.com

Firebreather

Donator - HE
PipPipPipPipPip
1,797 posts
Posted 07 December 2009 - 02:27 PM
Arthur, I agree that in the future, it might be easier to simply manually adjust the timer for acid delivery, but it's fun to contemplate designs that do the job for you. A computer would be ideal... I like the notion of a divided vat as well. The DATAQ software has an SDK, and it would be possible to make a dedicated system (probably using Visual Basic, as I am not up on C+) that would be devoted to this particular process. The DATAQ hardware has a pair of outputs that could easily be used to control any hardware desired. Definitely food for thought.

Here is a post I made at Science Madness today: I'm ready to power up the lead dioxide anode made last January for the first time...

The small test cell is completed. I didn't realize initially how small my LD anode really is. It measures 8.9 X 4.6 cm, with a basic surface area of 0.41 dm^2. Given the convolutions, the surface as viewed under a microscope, and the mesh configuration, I am taking a wild guess and multiplying this by 2.4 to determine the functional surface area. A major MMO manufacturer told me that their MMO mesh was 2.2 times the basic dimensions.

This yields a surface area of 98.4 cm^2 or 0.984 dm^2. I'm going to call it 1.0 dm^2 for purposes of current. Literature yields a range of 15 to 35 amps per dm^2, and my thoughts are 20 amps is a good starting point, which can be altered depending upon temperature, with 60 degrees being an upper limit. The fairly small Ti strap is going to limit the current anyhow - this anode was made when my understanding of the limitations of titanium as a conductor was not as good as it is now, and the strap is too small.

The cathode is titanium, and fairly small, yielding a higher current density at the cathode. For the first run, at least, I am not going to add NaF or any other sort of additive. I want to see what sort of CE I can get in the native state.

The only other change I made was the use of viton gasket rather than skived PTFE gasket, with the hope that it will reduce the inevitable salt creep.

Tomorrow, I will mix up the chlorate and power it up.

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